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Job No.: CECTC/BBMP/MS/W.No.12&13/WMM/GR/2016-17

Date : 28.02.2017

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.

Agency : **Sri. Muraliswamy,** Contractor, Bangalore.

Name of Work : Improvements & Asphalting of ward roads & connecting roads in Ward No.12 & 13 of Shettyhalli subdivision, Dasarahalli Zone, Package No.DZ 2015-16-(01), BBMP, Bangalore.

Date of Testing : 28.02.2017

Material : Wet Mix Macadam

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **12320**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	490	490	4.0	96.0	95-100
22.4	4225	4715	38.3	61.7	60-80
11.2	2560	7275	59.1	40.9	40-60
4.75	1355	8630	70.0	30.0	25-40
2.36	1290	9920	80.5	19.5	15-30
0.600	1240	11160	90.6	9.4	8-22
0.075	850	12010	97.5	2.5	0-8

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AE - 12
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ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು

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10.03.2017

Job No.: CECTC/BBMP/MS/W.No.12&13/BC/AIV/2016-17

Aggregate Impact Value

IS: 2386 Part IV

Client	Executive Engineer, Dasarahalli Division, BBMP, Bangalore.
Agency	Sri. Muraliswamy, Contractor, Bangalore.
Name of the Work	Improvements & Asphalting of ward roads & connecting roads in Ward No.12 & 13 of Shettyhalli subdivision, Dasarahalli Zone, Package No.DZ 2015-16-(01), BBMP, Bangalore.
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Bituminous Concrete
Date of Testing	10.03.2017

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	371	369	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	83	81	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	288	288	
4	Aggregate Impact value = percent fines $100^* (W_2/W_1)$ percent	22.37	21.95	22.16

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

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ಕಮಾಂಡೆಕ್ ಕಾಮಗಾರಿಯನ್ನ ಪ್ರಾರಂಭಿಸಲು
ಕೆಟ್ಟಕ್ಕೆ ಅನುಮತಿ, ರಾಜರಾಜೇಶ್ವರಿ ವಲಯ
ಬಿಬಿಎಂಪಿ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ. ರಸ್ತೆ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು

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Job No.: CECTC/BBMP/MS/W.No.12&13//BC/Shape/2016-17 : 10.03.2017

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
Agency	: **Sri. Muraliswamy,** Contractor, Bangalore.
Name of Work	: Improvements & Asphalting of ward roads & connecting roads in Ward No.12 & 13 of Shettyhalli subdivision, Dasarahalli Zone, Package No.DZ 2015-16-(01), BBMP, Bangalore.
Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Bituminous Concrete
Date of Testing	: 10.03.2017

Result : Flakiness Index = **10.66%**

Elongation Index = **12.83%**

Result : Combined Flakiness & Elongation index **23.49%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Bituminous Concrete is 30%

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ಮಿಸ್.ಎಂ. ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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Job No.: CECTC/BBMP/MS/W.No.12&13/BC/AGG/2016-17

11.03.2017

Aggregate Gradation Test
IS : 2386 Part I

Client	Executive Engineer, Dasarahalli Division, BBMP, Bangalore.
Agency	Sri. Muraliswamy, Contractor, Bangalore.
Name of the Work	Improvements & Asphalting of ward roads & connecting roads in Ward No.12 & 13 of Shettyhalli subdivision, Dasarahalli Zone, Package No.DZ 2015-16-(01), BBMP, Bangalore.
Sample I / D	Hot Mix Plant, Bangalore
Type of Mix	Bituminous Concrete
Date of Testing	11.03.2017

Total Weight of Sample: 5300 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	520	9.81	9.81	90.19	79 - 100	
9.5	545	10.28	20.09	79.91	70 - 88	
4.75	720	13.58	33.68	66.32	53 - 71	
2.36	665	12.55	46.23	53.77	42 - 58	
1.18	610	11.51	57.74	42.26	34 - 48	
0.600	585	11.04	68.77	31.23	26 - 38	
0.300	545	10.28	79.06	20.94	18 - 28	
0.150	360	6.79	85.85	14.15	12 - 20	
0.075	430	8.11	93.96	6.04	4 - 10	

Total Weight of Sample: 4850 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	620	12.78	12.78	87.22	79 - 100	
9.5	485	10.00	22.78	77.22	70 - 88	
4.75	623	12.85	35.63	64.37	53 - 71	
2.36	530	10.93	46.56	53.44	42 - 58	
1.18	615	12.68	59.24	40.76	34 - 48	
0.600	553	11.40	70.64	29.36	26 - 38	
0.300	389	8.02	78.66	21.34	18 - 28	
0.150	370	7.63	86.29	13.71	12 - 20	
0.075	352	7.26	93.55	6.45	4 - 10	

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Job No: CECTC/BBMP/MS/W.No.12&13/BC/Gr/2016-17

11.03.2017

GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IS : 2386 and IRC : SP : 11 - 1984

CLIENT	**Executive Engineer,** Dasarahalli Division, BBMP, Bangalore.
AGENCY	**Sri. Muraliswamy,** Contractor, Bangalore.
NAME OF THE WORK	Improvements & Asphalting of ward roads & connecting roads in Ward No.12 & 13 of Shettyhalli subdivision, Dasarahalli Zone, Package No.DZ 2015-16-(01), BBMP, Bangalore.
SAMPLE I/D	Roads in Ward No.12 & 13
DATE OF TESTING	11.03.2017

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	Trail 1	
19	0	0	0	100	100
13.2	32.6	6.97	6.97	93.03	79-100
9.5	45	9.62	16.58	83.42	70-88
4.75	79	16.88	33.46	66.54	53-71
2.36	61.5	13.14	46.60	53.40	42-58
1.18	72.8	15.56	62.16	37.84	34-48
0.6	48.5	10.36	72.52	27.48	26-38
0.3	31.9	6.82	79.34	20.66	18-28
0.15	36.5	7.80	87.14	12.86	12-20
0.075	35.8	7.65	94.79	5.21	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	34.6	7.38	7.38	92.62	79-100
9.5	42.5	9.06	16.44	83.56	70-88
4.75	73.8	15.74	32.17	67.83	53-71
2.36	65.8	14.03	46.20	53.80	42-58
1.18	70.4	15.01	61.22	38.78	34-48
0.6	45.9	9.79	71.00	29.00	26-38
0.3	35.7	7.61	78.61	21.39	18-28
0.15	21.6	4.61	83.22	16.78	12-20
0.075	46	9.81	93.03	6.97	4-10

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